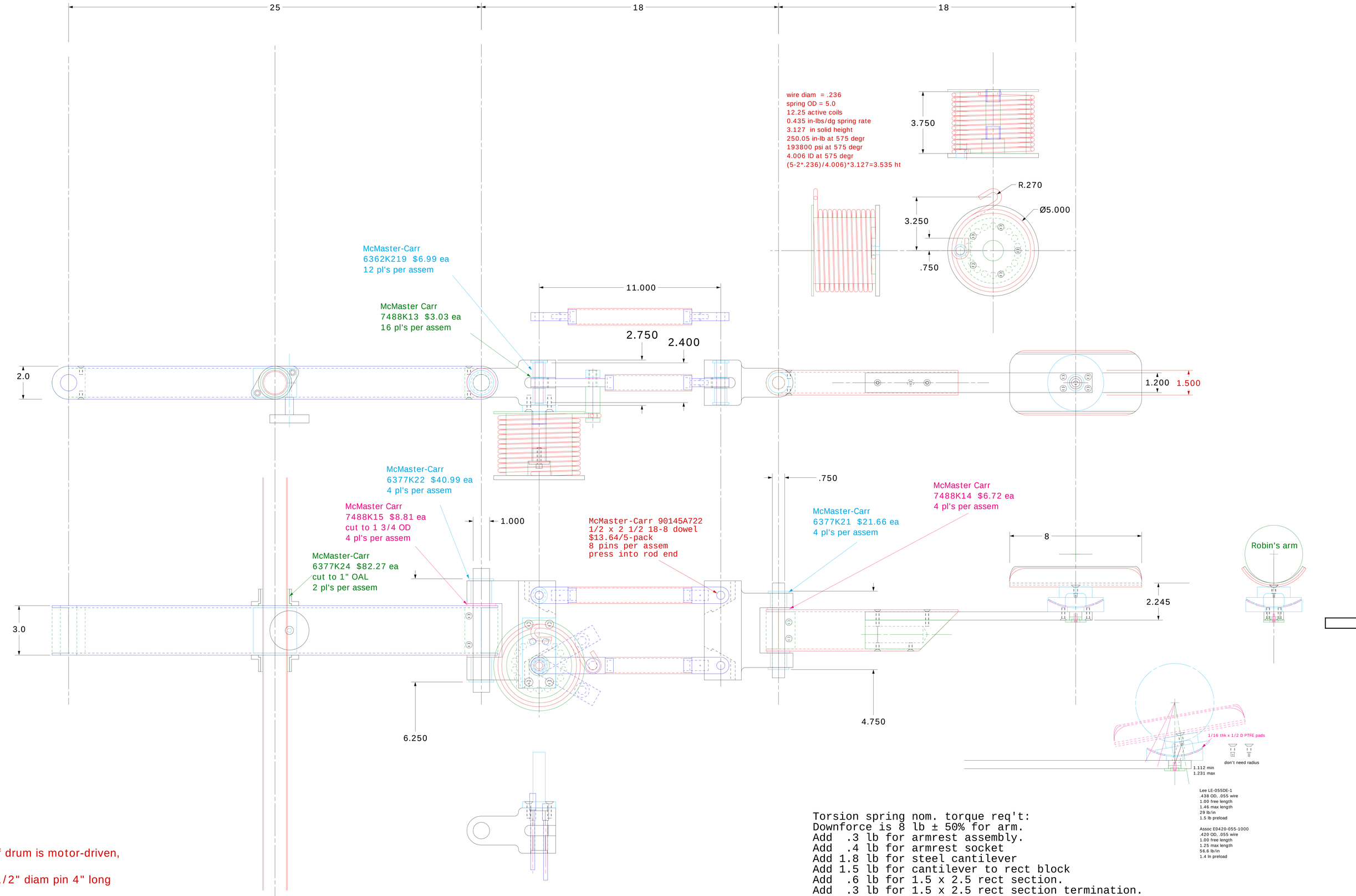
REQ	ITEM	PART NUMBER	DESCRIPTION
	1		
	2		



Lee LE-055DE-1
.438 OD, .055 wire
1.00 free length
1.46 max length
29 lb/in
1.5 lb preload

Assoc E0420-055-1000
.420 OD, .055 wire
1.00 free length
1.25 max length
56.6 lb/in
1.4 ln preload

If drum is motor-driven,

1/2" diam pin 4" long

J = (π/64)*.5^4 = .003068

twist = TL/JG
= (250*4)/(.003068*11.5E6)
= .028 radians = 1.6°

shear = Tr/J = 250*.25/.003068 = 20000 psi

twist and shear are OK

flanged bushing loadings
are all under 100 psi so
Rulon J is suitable.
However, use LR at 4bar ends
anyhow because of torsion spring
force.

```
Torsion spring nom. torque req't:
Downforce is 8 lb ± 50% for arm.
Add  .3 lb for armrest assembly.
Add  .4 lb for armrest socket
Add 1.8 lb for steel cantilever
Add 1.5 lb for cantilever to rect block
Add  .6 lb for 1.5 x 2.5 rect section.
Add  .3 lb for 1.5 x 2.5 rect section termination.
Add 5   lb for 4bar-to-link yoke.
Add  .9 lb for half of the two 4-bar links.
sum = 19 lb;  19 lb * 11" = 210 in-lb nom torque req'd from torsion spring
high = 250 in-lb; low = 170 in-ln
```

REV	DWN	CHK	ZONE	DATE	CHANGES

UNLESS OTHERWISE SPECIFIED
TOL'S .XX ± FRACT. ±
.XXX ± ANGLES ±
.XXXX ± FINISH √

Threads are class 2.
Chamfer ends of all screw threads 30°.
Cut 1.5 pitch thr'd relief with round nose tool on machine cut threads.
Break edges .016 max on mach'd work.
Remove burrs, weld spatter, scale.
Reference: ANSI Y14.5

SHOP ORDERS
ACCT NO. | BDR. NO.
DATE ISS'D | DATE REQ'D | NO. REQ'D 1
DELIVER TO
SURFACE TREATMENT
IDENT. METHOD
DWN BY JOHN BERCOVITZ | DATE 03/06/30
CHK BY | DATE

LAWRENCE BERKELEY LABORATORY
UNIVERSITY OF CALIFORNIA - BERKELEY
DesignWorks
Ergo Armrest - Gen III
Arm Assembly, with sphere
DO NOT SCALE PRINTS
PATENT CLEAR. | DWG. TYPE | SHOWN ON | SCALE Half
MICROFILMED | DESN ACCT NO | CATEG. CODE | DWG. NO. | SIZE | REV